



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

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REPLY TO THE ATTENTION OF:

SR-6J

March 23, 1998
DCL098002

Mr. Joseph Benedict
Forest Preserve District of DuPage County
P.O. Box 2339
Glen Ellyn, IL 60138

EPA Region 5 Records Ctr.



248071

RE: Proposed Natural Attenuation Study

Dear Mr. Benedict:

Thank you for submittal of the Proposed Natural Attenuation Study, dated February 18, 1998. The United States Environmental Protection Agency has reviewed this document and solicited comments from the Illinois Environmental Protection Agency (the Agencies). The Agencies agree with the general concept and approve the proposed Natural Attenuation Study with the following clarification/modification.

It is understood that reductive degradation is most likely the primary mechanism for degradation of chlorinated aliphatics in groundwater at the site, and that reductive degradation of chlorinated aliphatics is largely dependent on electron donor supply. This is unlike hydrocarbon contamination where the contaminants are the electron donors. The point being, if the electron donor is depleted before the chlorinated aliphatic is removed, reductive dechlorination ceases. For this reason, a comprehensive survey of terminal electron donors and products is especially useful. Specifically, the addition of sulfate/sulfide, nitrite, iron (II), chloride, methane, ethane and ethene analyses in groundwater would inexpensively provide this information. Also, redox potential, dissolved oxygen, alkalinity and conservative tracers (for normalizing first-order decay constants) provide valuable degradation information and are similarly inexpensive analyses.

Additionally, it is anticipated that because the groundwater plume has varying concentrations of contaminants, the presence of electron donors varies and there are differing magnitudes of groundwater flows both vertically and horizontally, the rate of natural attenuation will vary throughout the plume. The Agencies believe the proposed modeling will have considerably more spacial resolution and a more representative decay rate constant can be developed if additional transects are completed. The addition of shallow aquifer wells G-144, G-118S, G-129, G-143, G-128S, G-142, G-127, and well G-102 as a background, would give three transects over the approximately 3000 foot landfill cross-section. Because the deeper aquifer is not as significant with regard to contamination, we recommend only the addition of wells G-138, G-139, G-140

and G-132 and G-134 as background.

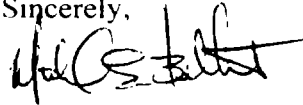
Also, the Agencies recommend that leachate be evaluated to determine daughter product ratios and for use in boundary calculations for modeling. Significant contaminant degradation may be occurring within the leachate long before it reaches groundwater. It would be beneficial to document this component of contaminant attenuation.

Additional information should be provided describing exactly what model will be used to investigate the effectiveness of natural attenuation, what data and steps will be needed to calibrate the model, and the how modeling results will be interpreted.

Finally, I have attached the EPA Quality Assurance Management Section's comments on the QAPP.

If you would like to discuss these recommendations or the attached QAPP comments, please contact me at (312) 353-6425 and we can coordinate a conference call with Rick Lanham of IEPA.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael E. Bellot", with a stylized flourish at the end.

Michael E. Bellot
U.S. EPA Remedial Project Manager

cc: Rick Lanham, IEPA
Jerry Hartwig, FPD
Peter Vagt, MW
Walter Buettner, MW
Manoj Mishra, PRC